

ABSTRACT OF THE DISCLOSURE

An RF module includes a multi-layered substrate. A base-band IC, a memory IC, a quartz oscillator and surface-mount components are mounted on the upper surface of the multi-layered substrate. A metallic cap also is attached to the upper surface of the multi-layered substrate. A cavity is formed in the lower surface of the multi-layered substrate substantially at the center thereof. A first RF-IC and a second RF-IC are embedded in the cavity. Wiring patterns for providing connections between the base-band IC and the memory IC, through-holes, RF passive components, and the shield ground electrode pattern are disposed inside of the multi-layered substrate.